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Confirmation No.: 4740

Filed: 28 September 2001

For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS, AND METHODS*B1
Contd*
M. M. M.
or dispersible in the oil phase and tend to be insoluble or sparingly soluble in the water phase.

Preferred vinyl polymers are soluble in the oil phase. Certain vinyl polymers are terpolymers. —

In the Claims

Please amend claims 1, 28-29, 32, 36-38, 40-42, and 48-52. The amended claims are provided below in clean form. Per 37 C.F.R. §1.121, amended claims are also shown in Appendix A with notations to indicate changes made (for convenience, all pending claims, including those added hereby, are provided in Appendix A).

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1. (AMENDED) A water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH₃, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms *on average* in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

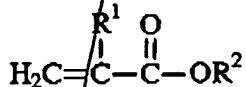
28. (AMENDED) A water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms *on average* in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

29. (AMENDED) A water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer that is insoluble or sparingly soluble in the water phase;

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wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

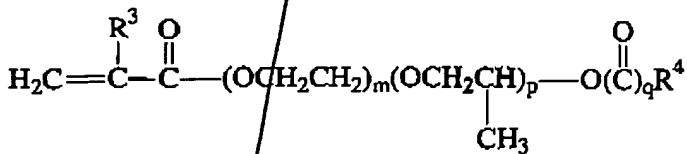


wherein:

R^1 is H or CH_3 ; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3 ; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and

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Contd*

the ethylene oxide groups (the "m" groups) are arranged in a reversed,
alternating, random, or block configuration;
with the proviso that the vinyl polymer includes no more than about 0.1 wt-%
copolymerized acidic monomers.

B4

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32. (AMENDED) A moisturizing composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH₃, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
36. (AMENDED) A moisturizing composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
37. (AMENDED) A moisturizing composition comprising a water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:
about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

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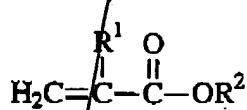
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Filed: 28 September 2007

Fri. 28 September 2001

POLY(WATER-IN-OIL) EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS, AND METHODS



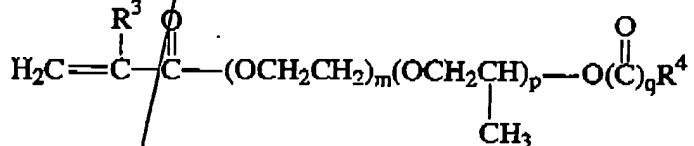
wherein:

R' is H or CH_3 ; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically

unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3 ; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

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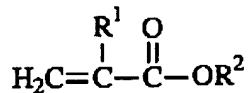
38. (AMENDED) A tissue antiseptic composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH₃, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and an antimicrobial; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

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40. (AMENDED) A tissue antiseptic composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and an antimicrobial; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

41. (AMENDED) A tissue antiseptic composition comprising: an oil phase; a water phase; an antimicrobial; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:



wherein:

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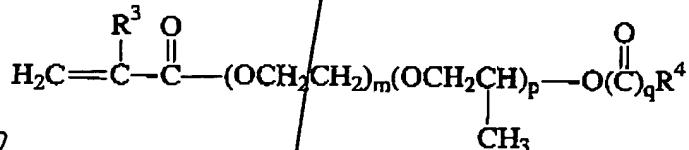
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R¹ is H or CH₃; and

R² is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R³ is H or CH₃; and

R⁴ is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

42. (AMENDED) A personal care composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH₃, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

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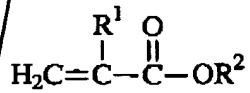
B7

48. (AMENDED) A personal care composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

C2

49. (AMENDED) A personal care composition comprising a water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:



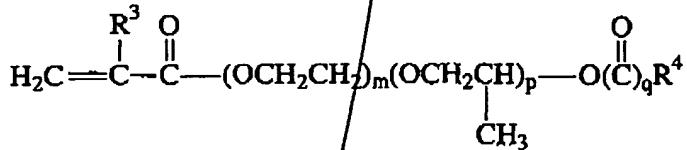
wherein:

R^1 is H or CH_3 ; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:

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wherein:

M is at least 2;

p is 0 to 50;

q is 0 or 1;

*R*³ is H or CH₃; and

*R*⁴ is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

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50. (AMENDED) A transdermal drug delivery composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH₃, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and a pharmaceutical agent; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

51. (AMENDED) A transdermal drug delivery composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-

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containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and a pharmaceutical agent; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

52. (AMENDED) A transdermal drug delivery composition comprising a water-in-oil emulsion comprising: an oil phase; a water phase; a pharmaceutical agent; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:
about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

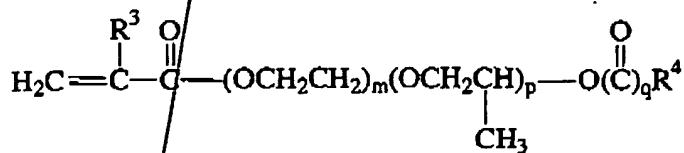
$$\text{H}_2\text{C}=\overset{\text{R}^1}{\underset{\text{I}}{\text{C}}}=\overset{\text{O}}{\underset{\text{||}}{\text{C}}}-\text{OR}^2$$

wherein:

R' is H or CH_3 , and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

m is at least 2;

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Contd*

p is 0 to 50;

q is 0 or 1;

 R^3 is H or CH_3 ; and R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.